2. Planning Context

Washington's Forest Practices program, directed by the Forest Practices Act (the Act), the forest practices rules and the Forest Practices Board (the Board), has been in place and operational since the mid-1970s (See FPHCP Section 4a, Administrative Framework). The program is the basis of the Forest Practices Habitat Conservation Plan (FPHCP), and it is important to recognize the events that have helped shape the program and, as a result, have shaped the FPHCP.

Section 2-1 reviews this history, focusing on milestones of the program and the impact of the significant actions taken by the Board. Table 2.1 provides an "at-a-glance" view of these actions and their results; more detail is provided in the text. These actions reflect a significant effort to improve water quality, to protect threatened and endangered wildlife and aquatic species and their habitat, and to ensure a viable forest products industry.

The evolution of the forest practices rules, the historic and comprehensive Forests and Fish Report (FFR) and the resultant changes to the rules represent a state-wide approach to addressing aquatic resource issues—one that is supported by a broad, scientific and landowner community and one that, through the adaptive management process, is designed to change over time as new information and knowledge develop.

The FPHCP is just one of many plans addressing the challenges of protecting and maintaining aquatic species. The collective impact of Federal land management strategies, habitat conservation plans covering state and private lands, and many regional, local, private and tribal watershed planning efforts contribute to specific and enduring protection measures for aquatic species and their habitat. The combination of the programmatic FPHCP covering state and private forestlands and other successful Federal, statewide, regional and local planning and conservation efforts will continue to improve salmon habitat and water quality and put listed species—including salmonids, wildlife and plants—on a positive path toward recovery in Washington State. The FPHCP and other conservation plans work together not only to protect and enhance natural resources, but also to help conserve the forestland base and prevent its conversion to non-forest uses. Section 2-2 identifies and examines some of these other programs and plans more fully.

Implementing the Forest Practices Act and rules also requires interacting with many Federal, state, tribal and local government statutes, regulations and policies. Together these regulations protect aquatic species and their habitat. Section 2-3 gives a brief summary of the regulations most applicable to forest practices activities.

Table 2.1 Forest Practices Milestones

Year	Action	Result / Comments
1974	Washington State Legislature passes the Forest Practices Act (76.09 RCW). Forest Practices Board established.	State's first comprehensive law addressing the impacts of forest practices on the environment. Recognizes the importance of protecting forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation and scenic beauty. Beginning of administrative framework.
1975	The Act establishes four classes of forest practices based on their potential to adversely impact public resources.	Class IV forest practices require a State and Environmental Policy Act (SEPA) review.
1976	Permanent forest practices rules established.	Forest practices rules to protect water quality, fish and wildlife habitat while allowing viable timber industry.
1982	Board identifies 14 critical issues requiring Class IV SEPA review, including forest practices: ● Within or near parks. ● Within Federal critical habitat or on lands containing a breeding pair of threatened and endangered species. ● Aerial application of pesticides near public water supplies. ● On unstable slopes.	Increase in the type of forest practices requiring SEPA review process, including an Environmental Checklist, and Determination of Significance.
1984-85	Reports Prepared for the Board: ● *Forest Riparian Habitat Study: Phase I Report* by the Riparian Habitat Technical Committee ● *Cumulative Effects of Forest Practices on the Environment*, *A State of the Knowledge*	Critical in recognizing the importance of riparian habitat and would later serve to trigger changes in the forest practices rules addressing riparian management zones. First review of cumulative effects as related to forest practices. Laid the foundation for future rules addressing cumulative effects.
1986-88	Timber/Fish/Wildlife Agreement (TFW) ● Historic accord relying on a collaborative effort and a consensus process. ● Process recommended to address cumulative effects. ● Significant rule revisions protecting riparian areas. ● Rule revisions included the introduction of the adaptive management concept.	Set the stage for a successful collaborative process addressing challenging resource protection issues that ultimately resulted in the Forests and Fish Report (FFR). TFW recommendations and the 1984 Cumulative Effects study would guide the development of the future watershed analysis rules. Continuation of recognition of the important role the riparian area plays in protecting aquatic habitat and water quality. Groundwork in place for role adaptive management would play in future FFR.

1992	Watershed Analysis Program established in the forest practices rules to address cumulative effects.	Collaborative approach designed by TFW cooperators. Information learned through watershed analysis set the stage for future changes to riparian rules as recommended in FFR.
1996-2000	Development of the Forests and Fish Report in response to Federal listing of threatened and endangered salmonids. Legislature passes the Forestry Module (FFR), ESHB 2091 of the Salmon Recovery Act.	FFR resulted in emergency forest practices rules addressing riparian habitat and water quality protection.
2001	Forest Practices Board adopts permanent rules implementing the FFR.	Forest Practices rules provide protection of aquatic species and ensure compliance with the Endangered Species Act and the Clean Water Act.

2-1 History of forest practices regulation in Washington

Throughout Washington's history, forests have produced timber and supplied family-wage jobs in both urban and rural areas of the state, supported fish and wildlife habitat, provided an array of recreational opportunities and accommodated changes in land use driven by population growth. These competing uses and values have, at times, been the subject of conflict and controversy, and ultimately have resulted in changes to regulations protecting the state's forests.

Table 2.1 identifies key milestones of the Forest Practices program and regulations that have led to the development of the FPHCP. The more detailed history that follows also reveals how regulations came to be and how they have changed. In part, the changes have been due to an evolving understanding of the scientific underpinnings associated with public resource protection. Also, in an effort to increase protection of the natural environment, public interest groups have identified areas for improvement in resource protection. Interested and impacted stakeholders have guided the effort and have been proactive in negotiating responsible changes to the forest practices rules with a clear goal of protecting public resources while maintaining a viable forest products industry. The evolution of forest practices regulation over the past 30 years reflects a significant, multi-stakeholder effort to protect water quality, fish and wildlife and their habitat, archaeological and historic sites, and to ensure harvested areas are reforested.

Early Forest Practices (pre-Act)

In the early years of Washington's history, the forests were viewed as a limitless resource, providing a seemingly cheap and inexhaustible supply of lumber for houses, buildings, railroads, ships and bridges—the raw materials for a nation of immigrants expanding westward (McCune and Schroedel 1998). Through the end of the

nineteenth century and much of the first half of the twentieth century, forest practices in Washington were unregulated. Early in the 1900s, after Washington State experienced devastating forest fires, the legislature appointed the first State Fire Warden and Forester to oversee fire laws and to focus on suppressing forest fires (Rodgers 1995; DNR 1975).

In 1945 the first legislation was enacted to regulate forest practices. Commonly referred to as the "reforestation law," the new law required forest landowners to reforest sites following logging. Natural regeneration was the preferred method in the 1940s, relying on seed trees or seed blocks to sow a new crop of trees. That approach eventually gave way to helicopter seeding and planting of high-quality seedlings grown specifically for the climate and elevation of the site harvested (Hairston-Strang et al. 1998).

Following World War II, a prosperous economy and advances in technology led to a construction boom that placed great demands on the nation's natural resources. The post-war era ushered in a period of intensive forest management, with timber production as the primary focus. Timber harvest, forest road construction, forest fertilization, aerial application of herbicides, broadcast burning for fire hazard reduction and site preparation, and pre-commercial and commercial thinning of forest stands were common silvicultural practices during the 1950s and 1960s and remained largely unregulated at that time (Rodgers 1995; DNR 1968).

Increasing concerns over diminished air quality and polluted rivers and streams spurred a national environmental movement in the 1970s. The first Federal legislation requiring the management of water pollution in the United States was the Federal Water Pollution Control Act of 1972, commonly known as the Clean Water Act (CWA)(EPA 2003). Research into the effects of forest practices was beginning to emphasize the importance of riparian areas in maintaining water quality. Results from Oregon's pioneering Alsea Watershed Study—the first long-term watershed study that evaluated the effects of logging on streams—showed significant temperature and sediment impacts associated with logging practices common at that time (Beschta 1978; Hall et al. 1987).

Research results such as these combined with the passage of the CWA prompted Washington and other western states to develop their own rules as a way to maintain local control over state forest practices activities (Rodgers 1995). Instead of addressing water quality problems with specific in-stream standards, Washington and other states in the region opted to implement "Best Management Practices" (BMPs) that were promulgated as state forest practices rules (Adams et al. 1988). BMPs are "…a practice or combination of practices that are determined…to be the most effective, practicable (including technical, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals" (USDA Forest Service 1980) and were identified as appropriate prevention tools for controlling nonpoint pollution sources (Hairston-Strang et al. 1998).

Forest Practices Act and Rules (1974-1982)

The Washington State Legislature, in passing the Forest Practices Act in 1974, declared that "forest land resources are among the most valuable of all resources in the state; that a viable forest products industry is of prime importance to the state's economy; that it is in the public interest for public and private commercial forest lands to be managed consistent with sound policies of natural resource protection; that coincident with

maintenance of a viable forest products industry, it is important to afford protection to forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation, and scenic beauty" (RCW 76.09.010). The Act was the state's first comprehensive law addressing the impact of forest practices on the environment. Forest practices are defined in part as "any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber" (RCW 76.09.020). Forest practices include such activities as timber harvest, road construction, pre-commercial thinning, reforestation, fertilization, brush control, and prevention and suppression of diseases and insects. This law and its corresponding rules regulate forestry activities on state and private lands and are designed to protect the environment and ensure that Washington continues to be a productive timber growing area.

The Act also created the Board—originally a body of nine appointed or designated members representing a variety of interests. In 1975, two members of the public were added to the Board, creating an 11-member board. The Board, working with the public, stakeholder groups and the Washington Department of Natural Resources (DNR), adopts forest practices rules and approves guidelines. The Board complies with the state's Administrative Procedures Act in its rulemaking functions, the State Environmental Policy Act, and the Open Public Meetings Act. In addition, the Board maintains consistent communication with the public and other interested parties through its website, quarterly and special meetings, public hearings and by receiving written and oral public comments at each meeting.

One of the purposes of the Forest Practices Act is to "achieve compliance with all applicable requirements of Federal and state law with respect to nonpoint sources of water pollution from forest practices" (RCW 76.09.010(2)(g)). The Washington Department of Ecology (Ecology) has been designated as the State Water Pollution Control Agency for purposes of the Federal CWA. Ecology is authorized to ensure that the requirements of the CWA are met and administers both the state and Federal clean water programs (RCW 90.48.260). The original version of the Forest Practices Act required the Board and Ecology to co-promulgate the forest practices rules. Currently, the Board must reach agreement with the director of Ecology prior to adopting forest practices rules pertaining to water quality protection (RCW 76.09.040). Ecology is required to monitor water quality to determine whether changes in the state water quality standards or the forest practices rules are needed. Ecology may also submit proposed forest practices rules relating to water quality protection to the Board.

The Forest Practices Act was modified in 1975 to establish a system of four classes of forest practices based on their potential to adversely impact public resources. Forest practices are classed as Class I, II, III or IV, with Class I having no direct potential of damaging public resources and Class IV having the greatest potential. Class IV forest practices were further distinguished as Class IV-Special or Class IV-General by rule of the Board. Class IV-General are forest practices on lands that were platted after January 1, 1960, on lands being converted to another use, or are those that would not be reforested because of a likelihood of future conversion to urban development. Class IV-Special forest practices are those that have been determined to have potential for a substantial impact on the environment. Class IV forest practices are subject to review by means of additional State Environmental Policy Act (SEPA) procedures. SEPA requires a

threshold determination using an environmental checklist and may require preparation of an Environmental Impact Statement (EIS).

Initially, forest practices identified as Class IV-Special were limited to only a few concerns: harvesting and other activities on lands known to contain the nest or breeding habitat of threatened and endangered species, widespread use of persistent insecticides, harvesting or road construction on landlocked parcels within parks, and alternate plans—a planning process that may deviate from the forest practices rules, but that provides at least equal protection to public resources. In 1980, a Class IV-Special Committee Report, requested by the Board, identified 14 critical issues related to forest practices impacts that needed the additional environmental review provided by Class IV-Special application processing and SEPA. As a result, new rules were adopted in 1982 that listed additional forest practices as Class IV-Special (FPB 1982). These included more forest practices within or near parks—and within the Federal critical habitat—or on lands containing a breeding pair of a threatened or endangered species. Aerial application of pesticides in areas that served as a public water supply was classed as Class IV-Special. Road, landing and rock and gravel pit construction and spoil disposal on unstable slopes were also included. In addition, forest practices on lands that contained historic or archaeological sites or on lands difficult to reforest, and aerial application of chemicals in areas near water were upgraded to Class III (FPB 1982).

The Board adopted the first permanent forest practices rules in Washington State in 1976. These rules were designed to protect water quality, fish and wildlife habitat, and ensure that harvested areas were adequately reforested. The rules outlined guidelines for reviewing and processing forest practices applications and detailed enforcement procedures when applicants did not adhere to the forest practices rules (WAC 222).

Impact of New Research (1982-1986)

Following the passage of the Forest Practices Act, the focus of research on the effects of forest activities on the environment shifted slightly from water quality impacts to effects on aquatic habitat. The report, *Forest Riparian Habitat Study: Phase 1 Report*, was prepared for the Board in 1985 by the Riparian Habitat Technical Committee. It was critical in recognizing the importance of riparian areas and would later serve to trigger changes in the forest practices rules, including addressing riparian management zones (FPB 1985). Subsequent studies began to increasingly highlight the role of large woody debris (LWD) in creating and maintaining healthy fish habitat and the influence of riparian harvesting on the availability of LWD to streams. Also, scientists were gaining a better understanding of the effects of increased in-stream sediment levels resulting from harvesting and road construction on unstable slopes. Much of this research was presented and discussed at a groundbreaking conference held in 1986. The conference, *Streamside Management: Forestry and Fisheries Interactions*, provided evidence that suggested the original 1976 forest practices rules were likely inadequate to meet the resource protection goals of the Act.

The environmental community and tribal representatives expressed concern about not only individual forest practices activity effects on aquatic habitat, but also the combined and synergistic effects of multiple forest practices within a watershed, also known as "cumulative effects." In response, the Board commissioned a study on cumulative effects in 1983. The report, *Cumulative Effects of Forest Practices on the Environment*, was

completed in 1984 (Geppert et al. 1984). The study provided a first approximation of the nature, source and extent of cumulative effects as related to forest practices. One of the study's recommendations was to review representative basins throughout Washington and begin to quantify and analyze the cumulative impact of forest practices across the landscape (Geppert et al. 1984). The study and its recommendations helped lay the foundation for the state's future watershed analysis rules.

Timber/Fish/Wildlife Agreement and Associated Rules (1986-1988)

In response to new research findings and public concern over the adequacy of existing forest practices rules to protect public resources, the Board began to consider changes to the forest practices rules to improve protection for riparian areas and fish and wildlife habitat, and to address cumulative effects. In a historic effort to resolve increasingly contentious natural resource protection issues without lengthy and costly lawsuits, representatives from state natural resource agencies, industrial and small forest landowners, tribes and environmental groups came together. The group developed a new, collaborative way of working on resource protection challenges through a consensus process. Their work became known as the Timber/Fish/Wildlife (TFW) Agreement, and was finalized in 1987. The agreement, in part, established ground rules for developing rule proposals, which would be forwarded to the Board for consideration (FPB 1987).

The TFW Agreement also included an approach to address cumulative effects associated with forest practices. The recommendations included state, regional and watershed basin goal setting, the use of risk assessment techniques for problem identification, implementation of an adaptive management program and monitoring to determine if goals were being met. The recommendations also contained other measures to increase stakeholder involvement in the forest practices application process, primarily to avoid damage to public resources by increased focus on the planning phase of the process (FPB 1987). The TFW Agreement recommendations, together with the 1984 cumulative effects study, were used to guide the development of the watershed analysis rules adopted by the Board in the early 1990s.

The TFW Agreement also led to significant forest practices rule revisions in 1987 and 1988, with protection of riparian areas as a primary focus (FPB 1988). Riparian management zones were widened and the rules defined the number, size and species of trees that would be left standing to protect wildlife habitat and provide shade and large woody debris for fish habitat (WAC 222-30-020 (1988)).

Two other important components of these rules were the introduction of the adaptive management concept and the use of interdisciplinary (ID) teams (FPB 1988). Adaptive management uses a research- and monitoring-based approach to assist in recommending modifications to the rules as needed to protect public resources. ID teams are made up of technical experts—fisheries biologists, hydrologists and geomorphologists, among others—and individuals from various stakeholder groups. The teams evaluate the environmental impact of proposed forest practices and recommend potential protective measures.

Another significant new rule required landowners to meet with tribes when forest practices involved tribal cultural resources, with the objective to work out a plan for

protecting archaeological sites and cultural value. Also, alternate plan proposals, previously classed as Class IV-Special applications, became Class III forest practices provided the plan clearly met or exceeded protection of public resources as provided in the Forest Practices Act (FPB 1988).

Watershed Analysis and the 1992 Rule Package

The Board established the watershed analysis program by rule in 1992 to address cumulative effects (chapter 222-22 WAC) (FPB and Ecology 1992). Watershed analysis represented a significant departure from conventional approaches to forestland regulation. Although the rules provided protection on a site-by-site basis, there were concerns that the cumulative effects of all the forest practices in a watershed basin may impact the watershed as a whole. Cumulative effects analysis was done with the Environmental Impact Statements prepared for the major rule adoptions in the past, but there was concern that this did not generate ongoing information on a watershed scale.

The watershed analysis rules and manual were the result of a science-based, collaborative approach designed by TFW cooperators. Watershed analysis recognized the importance of using a science-based approach for assessing watershed problems and sensitivities of an entire basin, rather than reviewing forest practices on a site-by-site basis. The watershed analysis process resulted in identification of specific management prescriptions, which if implemented within a watershed, would reduce negative cumulative effects. The process included a public review of the findings of a watershed analysis and proposed management prescriptions before final acceptance of the plan (FPB 1997). The information gathered and the prescriptions crafted from over 50 watershed analyses statewide set the stage for changes to the forest practices rules recommended in the April 1999 Forests and Fish Report.

In addition to establishing the watershed analysis program to specifically address concerns about cumulative effects, the 1992 rule changes also included retention of wildlife reserve trees; establishment of wetland management zones; limits on clearcut harvest size and timing; more stringent environmental review of the application of chemicals; operations on unstable slopes and archaeological, historical and cultural sites and filling of wetlands. The rules also imposed restrictions on the use of pesticides, fertilizers and other forest chemicals, and added a temperature prediction method to ensure retention of adequate riparian shade (FPB and Ecology 1992).

To address sustainability of harvest and cumulative effects, the Board also required DNR to monitor the rate of timber harvesting and report the results to the Board each year (FPB and Ecology 1992). In 1993, DNR prepared the first rate of harvest study for the years 1988 through 1991 (DNR 1993). The overall yearly rate of even-aged harvest for all landowners in western Washington (private, Federal, state, tribal and other) was 1.3 percent. For private landowners, it was 0.9 percent. For eastern Washington, the overall yearly rate of even and uneven-aged harvest for all landowners was 0.6 percent. For private landowners in eastern Washington, it was 0.3 percent (DNR 1993).

Northern Spotted Owl and Marbled Murrelet Rules

NORTHERN SPOTTED OWL RULES

The Board adopted emergency forest practices rules in response to the Federal listing of the northern spotted owl in 1990 under the Endangered Species Act (ESA). The United States Fish and Wildlife Service (USFWS) designated spotted owl critical habitat solely on Federal lands (USDI 1992a) and anticipated that the major burden of conservation and recovery of northern spotted owl populations would be carried by these lands. The final draft Recovery Plan for the northern spotted owl (USDI 1992b) recommended establishment of conservation areas on Federal lands as the primary means for achieving recovery of the spotted owl. In addition, in response to a request by the Board, Hanson et al. (1993) identified important non-Federal landscapes for "essential owl habitats," and provided recommendations for site- and landscape-specific plans.

In 1996 the Forest Practices Board conducted an evaluation of alternatives for providing additional protection for the spotted owl. The Board's intent was to "define a level of conservation contribution from non-Federal lands that is essential to complement the Federal recovery and conservation strategy; identify those landscapes that are essential to complement the Federal conservation and recovery strategy; maximize the use of local planning to promote flexibility; minimize conflicts and economic impacts" (FPB 1996). Permanent spotted owl rules were adopted in July 1996 partly based on the USFWS-proposed 4(d) rule for spotted owls on non-Federal lands and partly based on the Hanson et al. (1993) report on essential owl habitat on non-Federal lands. The rules designated ten spotted owl special emphasis areas (SOSEAs) to provide for demographic support, dispersal support or a combination of both. Timber harvest, road construction and aerial application of pesticides on suitable owl habitat inside owl circles within the SOSEAs are Class IV-Special forest practices (with the exception of the Entiat SOSEA) and must comply with SEPA. Within the Entiat SOSEA, these SEPA requirements only apply to demographic support areas. The Board's goals in adopting SOSEAs was to "maintain owls where they can make a contribution to the species, not maintain all individual owls where they currently exist" and to "allow strategic allocation of habitat to those owls that have the potential to contribute to the viability of the species" (FPB 1996). Furthermore, consistent with WAC 222-16-080, the Board recently requested that the Washington Department of Fish and Wildlife (WDFW) conduct a review of the wildlife rules—including those rules specific to spotted owls—and report back beginning in November 2004. Part of this review will be to "determine whether circumstances exist that substantially interfere with meeting the goals of the SOSEAs." The complete wildlife review is due to be completed by early 2006.

MARBLED MURRELET RULES

The Board adopted emergency forest practices rules in response to the Federal listing of the marbled murrelet in 1992 under the ESA. The alternatives evaluation for protection of spotted owls referenced above also evaluated murrelet rule alternatives, which led to the adoption of permanent marbled murrelet rules in 1997. The rules were changed, in part, to identify state critical wildlife habitat for marbled murrelets. As a result, specific forest practices proposed within critical habitat areas of the murrelet were added to the Class

IV-Special list. These proposed forest practices are subject to the more demanding Class IV-Special environmental review, including meeting the requirements of SEPA.

Development of Forests and Fish Report (1996-1999)

In the mid-1990s, three issues emerged that led to the adoption of emergency forest practices rules, and ultimately permanent rules, for addressing water quality issues, water typing inconsistencies and threatened and endangered salmonids. First, a growing number of streams were not meeting water quality standards as defined in the Federal Clean Water Act and were included on Ecology's 303(d) list, as described in Section 303(d) of the CWA. The CWA requires that a water cleanup plan, also known as a total maximum daily load (TMDL), be developed for water bodies on the 303(d) list (See FPHCP Section 2.3.6).

The second issue was related to the accuracy of water type base maps used to establish fish presence—and absence—for purposes of implementing appropriate forest practices protection measures. In the early 1990s, biologists with tribes and certain fish conservation groups often reported finding fish farther upstream in some areas than the official stream typing maps recognized. In response to the studies by the biologists, TFW cooperators developed a recommendation in 1996 that resulted in the Board's adoption of emergency water typing rules. The emergency rules changed the water type definitions by modifying the gradient and width criteria for fish-bearing waters.

The third issue that led the Board to adopt emergency rules in 1998 was the pending listing of several species of salmonids in Washington as threatened or endangered under the ESA. The Board's policy has been to use its authority under the Act to regulate forest practices activities in ways designed to help achieve ESA objectives. In response to the listings, the Board adopted emergency salmonid rules to ensure forest practices on state and private forestlands complied with the ESA. The rules made all forest practices activities within 100 feet of a stream or river that served as habitat for a listed species subject to review under SEPA.

As a result of the Federal listings of salmonids under the ESA and Ecology's listing of many Washington streams as "water quality impaired" water bodies under the CWA, concerns began to grow over the need to modify the forest practices rules to better protect riparian habitat and aquatic resources. In many cases, the same concerns resulted from watershed analysis processes. This suggested that riparian buffer widths and leave-tree requirements might be inadequate to ensure healthy, functioning riparian systems. Watershed analysis results also indicated that in many areas, forest roads were an ongoing contributor of sediment to water bodies and adversely impacted water quality.

In response, stakeholder groups, including representatives from Federal agencies (National Oceanic and Atmospheric Administration (NOAA) Fisheries, USFWS, Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) Forest Service) and state natural resource agencies (DNR, Ecology, WDFW), the office of the governor, tribes, county representatives, large industrial forest landowners and small forest landowners jointly produced a science-based plan—the Forests and Fish Report—for protecting water quality and aquatic and riparian-dependent species on state and private forestland in Washington State. The goals identified by the

Board in September 1998 and achieved through the negotiated effort of the FFR and subsequent changes in the forest practices rules were:

1) Provide compliance with the Endangered Species Act for aquatic and riparian-dependent species on covered forestlands;

2) Restore and maintain riparian habitat on covered forestlands to support a harvestable supply of fish;

3) Meet the requirements of the Clean Water Act for water quality on covered forestlands; and

4) Keep the timber industry economically viable in the state of Washington.

Specifically, the FFR recommended that rules be adopted to:

- protect stream banks from erosion,
- limit the amount of sediment entering streams,
- ensure fish passage to upstream habitat,
- minimize the construction of new roads,
- require landowners to prepare and implement Road Maintenance and Abandonment Plans (RMAPs) designed to address road-related cumulative impacts by 2015,
- establish mature, conifer-dominated riparian forests to provide adequate shade to streams and, over time, recruit wood to streams and
- establish an adaptive management and monitoring program.

Forests and Fish Rules (Emergency – 2000; Permanent – 2001)

The Washington legislature passed the 1999 Salmon Recovery Act, 1999 Washington Laws Sp. Sess. Chapter 4 (also known as the "Forests and Fish Law" and ESHB 2091), directing the Board to adopt rules consistent with the recommendations in the FFR. The Board promulgated emergency forest practices rules in January 2000 and permanent rules in May 2001. The permanent forest practices rules that became effective in July 2001 are designed to protect water quality and aquatic and riparian-dependent species and reduce cumulative effects across the landscape (FPB 2001) (See FPHCP Section 4b).

Through the Adaptive Management and monitoring program—initially introduced in the 1987 TFW rule package—the forest practices rules are monitored to determine how resources are responding. Research and monitoring are designed to occur at various watershed scales, and to evaluate resource conditions in light of forest practices activities. If needed, recommendations for rule changes are made to the Board. Any changes to rules based on the 1999 Salmon Recovery Act or addressing aquatic resources can only occur through the following avenues: legislation, court decisions or adaptive management

(RCW 76.09.370(6)). The adaptive management process requires that any changes to these rules be based on peer-reviewed scientific research and monitoring.

The 1999 Salmon Recovery Act also added a twelfth member to the Board, representing the director of the Washington Department of Fish and Wildlife, and replaced the requirement that Ecology co-promulgate forest practices rules relating to water quality with a requirement that the Board and Ecology reach agreement on water quality rules prior to adoption.

Updated Road Maintenance and Abandonment Plan Rules (RMAP) (2003)

In an effort to reduce road-related sediment in streams and to identify road-related blockages to upstream habitat for fish, both the emergency and new permanent rules require forest landowners to develop RMAPs. The plan is an inventory of forest roads within a particular ownership, an assessment of the current road conditions, the identification of and a timetable for necessary repairs, ongoing maintenance and/or abandonment. Road repairs, such as culvert replacements, are expensive and can place a heavy financial burden on forest landowners. After extensive statewide discussions with small forest landowner groups, the 2003 Washington Legislature passed an RMAP bill minimizing the unintended and disproportionate economic hardship on small forest landowners (HB 1095). The new law modified the definition of "small forest landowner" and "forest roads," clarified how the RMAP requirements applied to small forest landowners and helped prioritize protection for fish-bearing streams. The law also directed the Small Forest Landowner Office within DNR to develop a cost-share program to help pay for the expense of replacing fish blockages on forestland owned by small forest landowners. New RMAP emergency rules (Sections of 222-16, 22-20, and 222-24) were adopted by the Board on October 15, 2003, became effective on October 31, 2003, and will remain in effect until permanent rules are adopted.

Cultural Resource Watershed Analysis Module and Rule Package (2001-2004)

In response to the cultural resource planning, protection and management commitments in the FFR (Appendices G, N, O) and the 1987 TFW Agreement, the TFW Cultural Resources Committee (comprised of tribes, timber landowner associations, DNR and the Office of Archaeology and Historic Preservation) collaboratively developed a Cultural Resource Protection and Management Plan as well as a module and rules for cultural resources in watershed analysis (FPB 2003). The cultural resources plan was reviewed and endorsed by the Forests and Fish Policy Committee and a new module was recommended through the Adaptive Management program for Board approval as part of its Board Manual on Watershed Analysis (Section 11). (See FPHCP Section 4a-4.1 for information about the Forests and Fish Policy Committee and the Adaptive Management program). An associated rule package was also recommended. The rule package primarily suggests modifications to chapter 222-22 WAC, which governs the conduct of watershed analysis. In August 2003, the Board directed staff to notify the public about potential rule making on the negotiated package. The rule making process to amend chapter 222-22 WAC is ongoing, with a proposal possible by December 2004.

2-2 Other Salmon Recovery Efforts in Washington

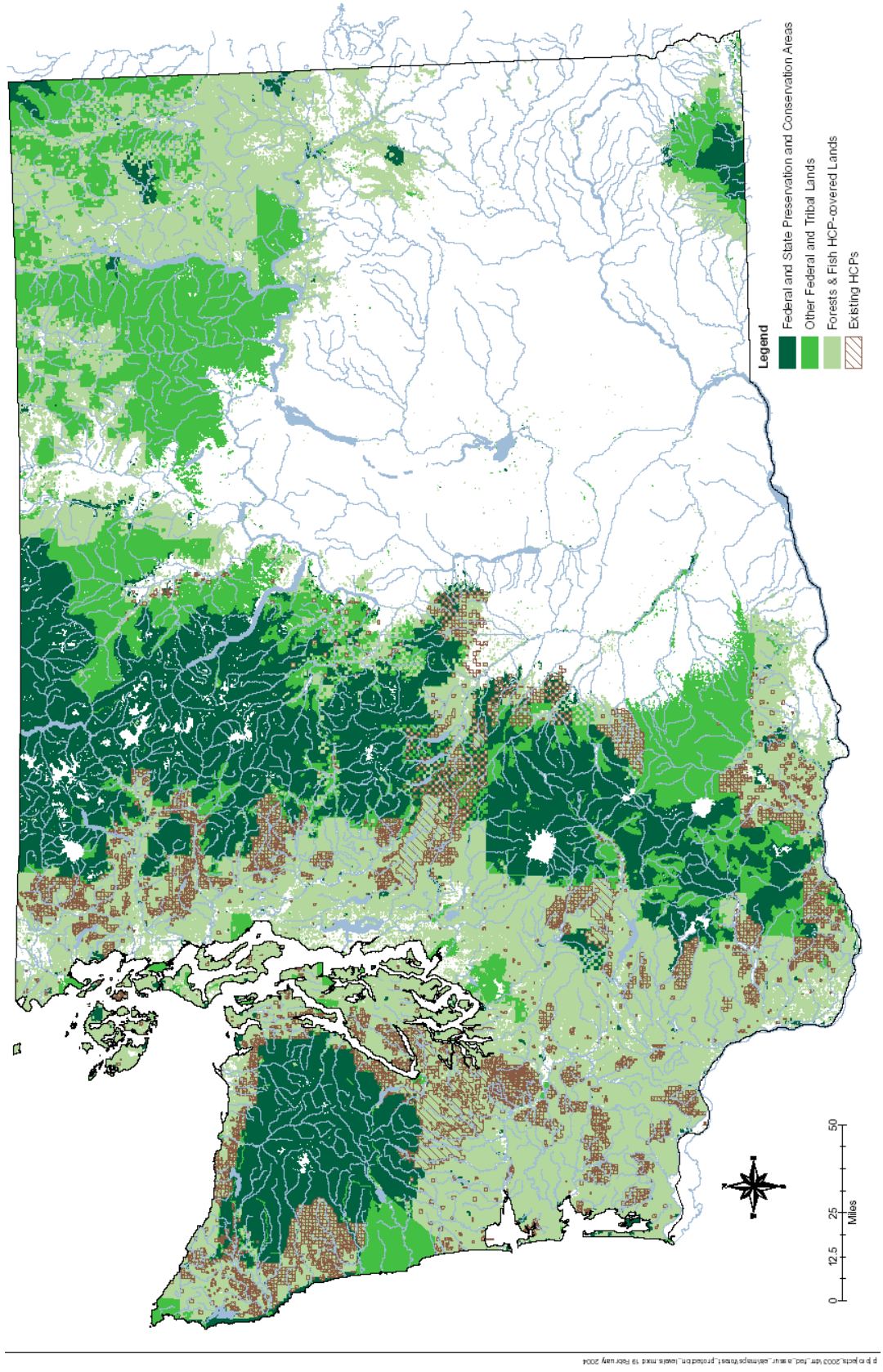
Washington's Forest Practices Act, rules and program represent only one of a number of protection and conservation strategies for salmon and other aquatic and riparian-dependent species in the state.

Because a host of factors contributed to the decline of the salmonid species now listed as threatened or endangered under the ESA, different recovery efforts focus on different factors or combinations of factors. These factors include agricultural practices, urbanization, forest practices, hydropower dams, barriers to fish movement (such as some road crossings), flood control, water withdrawals, poaching, commercial, recreational and subsistence fish harvest, and hatcheries along with natural factors such as climate, streamflow, predation and ocean conditions (JNRC 1999).

Figure 2.1 gives a statewide view of the forested lands in Washington covered by a range of protection, preservation and conservation strategies. The lightest green area on the map represents all of the forestland that will be covered under the FPHCP—approximately 9.1 million acres, or slightly less than 50 percent of all forestland in Washington. The other shaded areas mark lands covered by other planning and restoration efforts to protect, improve and restore habitat and water quality.

Plans that benefit fish habitat and water quality in Washington include large, multi-state Federal forest management plans, state and private landowner habitat conservation plans, recovery plans being developed through the coordinated efforts of regional organizations, growth management and local watershed planning, and individual conservation and management efforts.

Figure 2.1 Management of Forested Lands in Washington State.



2-2.1 Federal and State Preservation and Conservation Areas

The dark green area on the map in Figure 2.1 shows the Federal and state forested lands in Washington that are included in preservation and conservation areas—approximately 6,468,300 acres, or 28 percent of all forestland in Washington.

- Included are all Federal forestlands managed by the National Park Service and USFWS; all National Forest System forestlands that are in Wilderness, Late-Successional Reserves, Adaptive Management Areas, Managed Late Successional Reserves, Administratively Withdrawn Areas and Riparian Reserves under the Northwest Forest Plan (except Matrix Lands) (BLM 2002).

- All state forestlands managed by the State Parks and Recreation Commission and by WDFW are included.

The majority of these lands are not subject to commercial timber harvest and other forest management activities. However, some areas may be developed as recreational areas or for other uses.

THE NORTHWEST FOREST PLAN

Years of controversy surrounding the management of Federal forestlands, including struggles over timber harvest, habitat needs of the northern spotted owl and native salmon, old growth preservation, and jobs, led to the creation of the Federal Northwest Forest Plan (NWFP). Implemented in 1994, the NWFP—an ecosystem approach to forest management—covers approximately 24 million acres of Federal forestland in western Washington, western Oregon, and northern California (BLM 1994). The Bureau of Land Management (BLM) and the USDA Forest Service jointly manage the NWFP.

The lands under the NWFP are divided into different types of areas, according to allowable management activities (see below). In Washington State, approximately seven million acres of Federal forestland are under the jurisdiction of the NWFP (FEMAT 1993):

- Congressional Reserves – 4.2 million acres or 60 percent
  These lands include National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers, National Wildlife Refuges and Department of Defense lands. These lands have been reserved by act of Congress and are preserved from forest management (BLM 1994).

- Managed and Late-Successional Reserves – 1.5 million acres or 22 percent
  Late-Successional Reserves aim to provide and promote a "functional, interactive, late-successional old-growth forest ecosystem" for old-growth and late-successional dependent wildlife species such as the northern spotted owl (BLM 1994). Commercial timber harvest is not allowed in late-successional reserves, although select silvicultural treatments (for example, thinning) may be permissible in stands up to 80 years of age if the activity furthers late-successional or old growth forest conditions (BLM 1994). Managed Late-Successional Reserves are lands mapped and defined as known northern spotted

owl activity centers and unmapped buffer areas set up to protect rare and locally endemic species. Their location may shift over time.

- Adaptive Management Areas – 292,000 acres or 4 percent
  These areas are managed to explore and develop different methods of forestry management to achieve ecological, economic, social and community objectives (BLM 1994).

- Administratively Withdrawn Areas – 250,100 acres or 4 percent
  These areas are lands not scheduled for timber harvest, including recreational areas, visual areas, backcountry and other lands not suitable for harvest (BLM 1994).

- Riparian Reserves – 232,300 acres or 3 percent
  These reserves are riparian areas along streams, wetlands, ponds and lakes, along with unstable areas and other areas that are designed to help maintain and conserve aquatic and riparian-dependent species habitat, riparian function, improve travel and dispersal corridors for terrestrial plants and animals, and provide a connection between late-successional forest habitats (BLM 1994).

- Matrix Lands – 465,000 acres or 7 percent
  These lands consist of Federal lands not assigned to one of the six land allocations described above (BLM 1994).

The majority of Washington forestland within the NWFP is protected in reserves and is not available for forest management activities, including commercial timber harvest. Silvicultural treatments are limited on lands within Managed and Late-Successional Reserves to those that foster older forest stand conditions. Commercial timber harvest occurs primarily within the Matrix Lands, or on only seven percent of the lands within the NWFP in Washington State. There are additional protection measures in place on these lands that further restrict timber harvest, such as a 15 percent green tree retention requirement and special protection for sensitive species habitat and wildlife needs (FEMAT 1993).

In all three states, on lands available for commercial timber harvest, the USDA Forest Service and BLM have established standards and guidelines to ensure a sustainable ecosystem and protect known northern spotted owl activity centers (FEMAT 1993).

The NWFP also includes an Aquatic Conservation Strategy (ACS) designed to provide regulations and programs to improve the health of the aquatic ecosystems in the NWFP lands across Washington, Oregon and California (BLM 1994). The ACS sets up rules for the Riparian Reserves, designates key watersheds in the NWFP, describes procedures for conducting watershed analyses and establishes watershed restoration programs for lands in the NWFP.

The combined effects of the Aquatic Conservation Strategy and allowable uses of the NWFP work together to maintain and improve habitats for aquatic and riparian-dependent species on Federal forestland. Over time, the NWFP will create millions of acres in additional late successional forest as younger stands are preserved and silvicultural treatments are limited to those helping to replicate older forest stand conditions.

NWFP UPDATE

In March 2004, two Record of Decisions were issued by the Federal agencies (BLM and the USDA Forest Service) responsible for the implementation of the NWFP. The first Record of Decision amends how the ACS objectives are applied to more accurately reflect the intention of the 1994 NWFP. The Decision clarifies that the ACS objectives would be attained at the watershed and landscape scale rather than at the project or site level. All site level projects would continue to meet the riparian buffer widths and other protective measures in the ACS guidelines. By clarifying that ACS objectives will be met at the larger landscape scale, projects that have short-term impacts, such as watershed restoration projects and timber sales, will move forward, as long as they comply with all of the protective measures specified in the guidelines
(BLM and USDA Forest Service 2004a).

The second Record of Decision removes the Survey and Manage Mitigation Measure Standards and Guidelines from the NWFP. The objective of "Survey and Manage" is to conserve rare and little-known species that were thought to be associated with Late-Successional and old-growth forests in the NWFP area. The Decision will:

1) Continue to provide for diversity of plant and animal communities in accordance with the National Forest Management Act and conserve rare and little-known species that may be at risk of becoming listed under the ESA.

2) Reduce the agencies' cost, time and effort associated with rare and little-known species conservation.

3) Restore the agencies' ability to achieve NWFP resource management goals and predicted timber outputs.

None of the species that were covered by the Survey and Manage Mitigation Standards and Guidelines are listed as threatened or endangered under the ESA, nor are any proposed for listing. All were evaluated for inclusions into the Federal agencies' Special Status Species Programs. Within the Special Status Species Program, for species that qualify, agencies must ensure that actions are consistent with the conservation needs of those species and that the actions do not cause the species to be listed under the ESA (BLM and USDA Forest Service 2004b).

STATE CONSERVATION AREAS

DNR's Natural Resources Conservations Areas (NRCA) and Natural Area Preserves (NAP) include lands managed by the state to conserve important native ecosystems, rare plant and animal species and unique natural features (DNR 2004b).

Natural Area Preserves protect the best remaining examples of many ecological communities, including rare plant and animal habitat. The NAP system presently includes 30,900 acres in 49 sites distributed throughout the state. In eastern Washington, habitats protected on preserves include outstanding examples of arid land shrub-steppe, grasslands, vernal ponds, oak woodlands, subalpine meadows and forest, ponderosa pine forests and rare plant habitats. Western Washington preserves include five large coastal preserves supporting high quality wetlands, salt marshes and forested buffers. Other

habitats include mounded prairies, sphagnum bogs, natural forest remnants and grassland balds (DNR 2004b).

Twenty-eight Natural Resources Conservation Areas—totaling 86,600 acres in Washington—protect outstanding examples of native ecosystems; habitat for endangered, threatened and sensitive plants and animals; and scenic landscapes. Habitats protected in NRCAs include coastal and high elevation forests, alpine lakes, wetlands, scenic vistas, nesting birds of prey, rocky headlands and unique plant communities. Critical habitat is provided for many plant and animal species, including rare species. Conservation areas also protect geologic, cultural, historic, and archaeological sites (DNR 2004b).

2-2.2 Other Federal and Tribal Lands

The medium green area on the map in Figure 2.1 represents other Federal and tribal lands—approximately 5,107,300 acres, or 22 percent of all forestlands in Washington. It encompasses lands referred to as Matrix Lands in the NWFP and includes some lands in each of the national forests. Also included are Federal lands in the Okanogan and Colville National Forests administered by the USDA Forest Service that are not part of the NWFP. In addition, the medium green area includes all forestlands managed by BLM, the Department of Energy, the Department of Defense, the Bureau of Reclamation and the Bureau of Indian Affairs. It also includes all tribal forestlands.

These lands contain both protected areas and lands subject to commercial timber harvest, salvage, thinning and other land management activities. These activities occur primarily on Matrix Lands under the jurisdiction of the USDA Forest Service, as well as on tribal lands and on lands managed by the Bureau of Indian Affairs.

2-2.3 Forest Practices HCP-covered Lands

As mentioned earlier, the light green area on the map in Figure 2.1 represents all of the forestland that will be covered under the FPHCP, or approximately 9.1 million acres. These are primarily private, state and local government managed forestlands where forest management activities are regulated by the Forest Practices Act and rules. See FPHCP Section 1-4, Activities Covered by the Plan, and Section 1-5, Lands Covered by the Plan, for more information.

2-2.4 Existing Habitat Conservation Plans – State, Private and Local Government

Private timber companies and local and state government entities have completed habitat conservation plans (HCPs) that include aquatic species. The brown-hatched area on the map in Figure 2.1 represents existing HCPs on state, private and local government managed forestlands.

Collectively, more than 2.2 million acres of land across the state of Washington are currently included in various HCPs, which provide conservation strategies for protecting aquatic species, aquatic habitat and water quality.

Through authorization from USFWS and NOAA Fisheries, the plans allow for the management of lands for various uses while ensuring the conservation and protection of threatened and endangered salmon, trout and steelhead among other species. The

following HCPs represent successful efforts across the state to maintain compliance with the ESA while continuing other interests.

WASHINGTON DEPARTMENT OF NATURAL RESOURCES STATE LANDS HCP

The largest of these plans is the DNR State Lands HCP. The multi-species HCP—one of the most comprehensive in the nation—covers approximately 1.6 million acres of state trust land. The HCP covers all DNR-managed forestlands within the range of the northern spotted owl. This includes all of the western part of the state, as well as lands on the eastern slopes of the Cascade Range, covering approximately 7 percent of all forestland in Washington. The HCP provides mitigation for the incidental take of the northern spotted owl and marbled murrelet. In addition, the HCP covers other federally listed species: Oregon silverspot butterfly, Aleutian Canada goose, peregrine falcon (federally delisted in 1999), bald eagle, gray wolf, grizzly bear and Columbia white-tailed deer. It also provides protection for 39 other species, including various mollusks, arthropods, fish species (including all federally listed salmon, bulltrout and steelhead), amphibians, reptiles, birds and mammals. However, aquatic species are not covered on approximately 228,000 acres of state land on the east side of the Cascade Crest (DNR 1997; USFWS 2003).

PRIVATE TIMBER COMPANY HCPS

Four private timber companies have completed HCPs that include aquatic species:

1) Green Diamond Resource Company (formerly Simpson Timber Company) has an HCP for operations on 261,575 acres of forestland in Grays Harbor, Mason and Thurston counties in western Washington. The HCP provides coverage for 24 species, among them a number of aquatic species including chinook, chum and coho salmon; bull trout; coastal cutthroat trout; and steelhead (USFWS 2003).

2) Plum Creek Timber Company implements an HCP for bull trout and 25 other species on 169,177 acres of their land along the Interstate-90 corridor between Seattle and Ellensburg (Plum Creek 1996). The Plum Creek Timber HCP includes a riparian management strategy that consists of five parts: 1) compliance with the state forest practices rules; 2) watershed analysis; 3) maintenance and protection of over 12,000 acres of riparian habitat areas and wetlands; 4) deferred harvest on stream segments listed as impaired on the CWA 303(d) list and wetland management zones and 5) an aquatic resources monitoring program (Plum Creek 1996).

3) West Fork Timber HCP (formerly Murray Pacific) covers 31 species, including bull trout, for 54,610 acres in Lewis County (USFWS 2003). The HCP calls for the creation and maintenance of riparian buffers and no-harvest zones. It also calls for road maintenance and abandonment in accordance with the state forest practices rules.

4) Port Blakely HCP covers the 7,486-acre Robert B. Eddy Tree Farm in Grays Harbor and Pacific counties. The HCP covers multiple wildlife and aquatic

species including bull trout, coastal tailed frog, Cascades frog and Van Dyke's salamander (USFWS 2003).

LOCAL GOVERNMENT HCPS

Two local governments, the cities of Tacoma and Seattle, have HCPs for watersheds within their jurisdictions.

1) The city of Seattle manages the Cedar River Watershed HCP for 77 species, including bull trout, on 90,546 acres of watershed area in King County (City of Seattle 1998). The HCP includes a number of riparian and aquatic strategies, including commitments to: eliminate timber harvest for commercial purposes on 56,223 acres of land and to set aside that land into an ecological reserve; to commit approximately $27.2 million for a fish and wildlife habitat restoration program and to remove approximately 38 percent of the forest roads within the watershed in the first 20 years of the HCP (City of Seattle 1998).

2) The Tacoma Water HCP stretches over 14,888 acres of the Green River Watershed and provides protection for 30 species, including chum, sockeye and chinook salmon; coastal cutthroat trout; steelhead and bull trout (Tacoma Water 2002).

Other small forest landowners HCPs have been completed or are currently in development. These plans include conservation measures for aquatic species, among other species.

2-2.5 State Salmon Recovery Strategy

THE SALMON RECOVERY ACT

The 1998 Salmon Recovery Act retains responsibility for the recovery of salmon at the state level, and coordinates local and regional salmon recovery efforts. "The legislature finds that it is in the interest of the citizens of the state of Washington for the state to retain primary responsibility for managing the natural resources of the state, rather than abdicate those responsibilities to the Federal government, and that the state may best accomplish this objective by integrating local and regional recovery activities into a statewide plan that can make the most effective use of provisions of Federal laws allowing for a state lead in salmon recovery" (RCW 77.85.005).

The Salmon Recovery Act also recognizes that the state's forest practices rules, consistent with the Forests and Fish Report, contribute substantially to the recovery of salmonids and protection of water quality. The Salmon Recovery Act represents a statewide effort to improve salmon habitat and is part of a statewide salmon recovery strategy. The Salmon Recovery Act created the Governor's Salmon Recovery Office (GSRO) and the Salmon Recovery Funding Board (SRFB) to support salmon recovery; encourage local groups to establish "Lead Entities" for salmon habitat improvement efforts; put forth a critical timeline for salmon recovery; and establish an independent science panel to assist in scientific review (GSRO 2002).

The GSRO coordinates and assists in the development of regional and local salmon recovery plans and efforts. In pursuit of this goal, the Governor's Joint Natural Resource

Cabinet (JNRC) published a 1999 comprehensive report, *Statewide Strategy to Recover Salmon: Extinction is Not an Option*. The Statewide Strategy provides overarching goals and strategies for salmon recovery in all four human-caused factors that influence the health of salmon: habitat, harvest, hatcheries, and hydropower—commonly referred to as the "four H's." It addresses land use issues, growth management plans, critical area ordinances and shorelines programs to protect salmon, salmon habitat, water quality and water quantity (JNRC 1999). FPHCP Section 2-2.6, Regional Efforts, describes several of the larger regional planning efforts for salmon recovery.

COMPREHENSIVE WATERSHED PLANNING ACT

The 1998 Comprehensive Watershed Planning Act complements the Salmon Recovery Act by providing for locally led, cooperative efforts to assess water resource needs and develop effective solutions on a watershed basis. These watershed plans assist the state's overall efforts to manage growth, protect threatened and endangered salmon runs, and improve water quality. The plans encourage the integration of existing laws, rules or ordinances that protect, restore or enhance fish habitat, including the forest practices rules (RCW 90.82.100). See FPHCP Section 2-3.6 for more information on regional watershed planning efforts in support of salmon recovery.

2-2.6 Regional Efforts

Local governments, tribes, businesses and other interested groups have joined forces across the state to support salmon recovery through the development of recovery plans. These groups hope to gain regional consensus on measurable fish population results; integrate actions necessary in the harvest, habitat and hatcheries arenas; and gain commitments to achieve results. To do this, they will coordinate a multitude of plans across watersheds into one regional plan, and help connect local, social, cultural and economic needs and desires with science and ESA goals (JNRC 1999). The Salmon Recovery Funding Board provides financial support—primarily through state funding—for individual projects submitted by Lead Entities, as well as for the following regional salmon recovery planning efforts.

PUGET SOUND

The Shared Strategy for Puget Sound (Shared Strategy) encompasses the watersheds surrounding Puget Sound. It is a collaborative effort involving local citizens, tribes, watershed planning groups, large stakeholder groups working in the watersheds—along with state, Federal and local government agencies—to create a recovery plan to protect and restore salmon runs, recover listed species and improve conditions in the entire ecosystem (www.sharedsalmonstratergy.org/faq.htm).

In addition, the Tri-County Salmon Recovery Initiative heads up recovery efforts in the central Puget Sound area, covering the three most populous and urbanized counties—Snohomish, King and Pierce. Along with the county governments, other contributors to the planning effort to protect and recover listed species include Federal and state agencies, tribes, local communities, businesses and environmental organizations (Salmon Information Center n.d.; JNRC 1999). This group faces the particular challenge of protecting and restoring aquatic resources in an increasingly urbanized environment.

LOWER COLUMBIA RIVER

The Lower Columbia Fish Recovery Board (LCFRB) develops salmon recovery plans for all ESA-listed salmonids (bull trout, chinook, chum and steelhead) in Clark, Cowlitz, Lewis, Wahkiakum and Skamania counties, and includes members from the Cowlitz Tribe, county commissioners, citizens and private interests. The LCFRB was created by the legislature in 1998 and aims to implement watershed conservation strategies for waters from the White Salmon River to the mouth of the Columbia River (LCFRB n.d.; JNRC 2002).

UPPER COLUMBIA RIVER

The Upper Columbia Salmon Recovery Board (UCSRB) includes representatives of Chelan, Okanogan and Douglas counties, the Confederated Tribes of the Colville Reservation, and the Yakama Indian Nation. The UCSRB is developing fish and wildlife plans for watersheds in north-central Washington (JNRC 2002).

SNAKE RIVER

The Snake River Salmon Recovery Board (SRSRB) includes citizen and technical representatives from Walla Walla, Garfield, Asotin, Columbia, Franklin and Whitman counties, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, and partnerships with state and Federal agencies. The SRSRB coordinates salmon recovery projects, and is developing an HCP for the Walla Walla watershed (SRSRB 2001; JNRC 2002).

MIDDLE COLUMBIA RIVER

The Yakima Sub-Basin Fish and Wildlife Planning Board (YSPB) includes Yakima and Benton counties, cities and the Yakama Indian Nation. The YSPB is working on draft regional fish and wildlife plans that address ESA-listed fish (YSPB n.d.).

In addition, WDFW administers and funds—with support from the USFWS—groups known as Regional Fisheries Enhancement Groups (RFEGs). The RFEGs develop and implement habitat projects including habitat restoration, fish passage barrier removal and erosion control, along with projects for salmon production, stream nutrient enrichment, watershed monitoring, and education and outreach to encourage watershed stewardship (JNRC 2002). The groups include: the Nooksack Salmon Enhancement Association, Skagit Fisheries Enhancement Group, Stilly-Snohomish Fisheries Enhancement Task Force, Mid-Sound Regional Fisheries Enhancement Group, Hood Canal Salmon Enhancement Group, South Puget Sound Salmon Enhancement Group, North Olympic Salmon Coalition, Pacific Salmon Coalition, Chehalis Basin Fisheries Task Force, Willapa Regional Fisheries Enhancement Group, Lower Columbia River Fisheries Enhancement Group, Eastern Washington Fisheries Enhancement Group, Tri-State Steelheaders Regional Fisheries Enhancement Group, and Upper Columbia Fisheries Enhancement Group (JNRC 2002).

2-2.7 Other Conservation Efforts

SALMON AND STEELHEAD HABITAT INVENTORY AND ASSESSMENT PROGRAM

In 1991, WDFW and the western Washington Treaty Indian Tribes began the Wild Stock Restoration Initiative (WSRI) to catalog and inventory salmon and steelhead stocks in order to determine their population status and extinction risk. The first product of this partnership was the Salmon and Steelhead Stock Inventory (SASSI), which delineated fish stocks, and determined their origin and status (NWIFC n.d.; WDFW n.d.).

In 1995, as a continuation of the WSRI and the work completed in SASSI, the Salmon and Steelhead Habitat Inventory and Assessment Program (SSHIAP) began. The program is co-managed by the WDFW and the Northwest Indian Fisheries Commission. With the help of partner organizations throughout the Pacific Northwest and funding from the Governor's Salmon Recovery Office, SSHIAP collects information about habitat conditions and fish stocks, and consolidates the information into a single database. SSHIAP is a powerful tool that assists resource managers in identifying habitat restoration projects having the greatest benefit to fish. Computer-generated maps are available that enable the user to view salmon conditions over a large geographic area or find information on a single stream segment (NWIFC n.d.). SSHIAP helps those working to restore salmon habitat to:

- analyze habitat conditions,
- identify barriers to salmon migration,
- identify and prioritize habitat protection and restoration projects, and
- develop recovery plans.

A December 2003 memorandum from SSHIAP to the Governor's Salmon Recovery Office includes estimates of over 800 barriers to fish passage on Forests and Fish covered lands having been repaired from 2000 to 2003. These repairs have made approximately 500 miles of previously inaccessible or poorly accessible habitat available to resident and anadromous fish.

SSHIAP currently covers Water Resource Inventory Areas (WRIAs) 1-23 (western Washington). Work is partially funded and underway to extend SSHIAP coverage to WRIAs 24-62 (eastern Washington). Twenty-nine partner organizations throughout the Pacific Northwest include colleges and universities; Federal, state and local governments; conservations groups; western Washington Treaty Indian Tribes; the Yakama Indian Nation; and the Confederated Tribes of the Colville Reservation (WDFW n.d.).

LAND EXCHANGES AND PURCHASES

Other voluntary efforts that assist aquatic resources include a number of land exchanges and purchases among private and public forest landowners. Land exchanges and purchases can serve a variety of purposes. For example, in 2000, a private timber company exchanged lands with the USDA Forest Service. The USDA Forest Service now manages 31,900 acres of the former timber company's forestland. Of those acres, the

exchange preserves 20,000 acres of roadless areas and 8,000 acres of old growth trees. In other exchanges or purchases, forestland may be consolidated for more efficient and effective forest management, to conserve native ecosystems or protect sensitive fish and wildlife habitat.

2-3 Relationship of FPHCP to other laws and regulations

Many Federal, state, tribal and local government statutes and regulations connect to the Forest Practices program and activities. Some help shape development of the rules; others connect through their implementation. Those with particularly strong connections are outlined in the rest of this section.

The ESA has already been addressed in FPHCP Section 1-2, Endangered Species Act and Assurances. Additional information can be found in the Environmental Impact Statement developed for the FPHCP, particularly Sections 1.2.3.1, ESA Section 10; 1.2.3.2, ESA Section 4; and 1.2.3.3, ESA Section 7.

Other particularly relevant Federal regulations include: National Environmental Policy Act, Clean Water Act, National Historic Preservation Act and the Columbia River Gorge National Scenic Area management guidelines. State regulations and policies include: State Environmental Policy Act, Growth Management Act, Washington State Water Pollution Control Act, Salmon Recovery Act (see FPHCP Section 2-2.5), Comprehensive Watershed Planning Act (see FPHCP Section 2-2.5), State Listing of Endangered, Threatened, and Sensitive Species, Shoreline Management Act, and the Washington Department of Agriculture regulations. A description of the applicable Federal and state regulations follow, except where noted above.

2-3.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) was passed in 1969 with the purpose to "declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality" (42 U.S.C. §4321). To achieve this, Federal agencies must integrate environmental values into their decision-making processes. NEPA requires full public disclosure and analysis of the environmental impacts of proposed Federal actions with the potential to significantly affect the quality of the human environment.

There are three levels of analysis depending on whether or not a proposed action could significantly affect the environment. These three levels include: categorical exclusion determination; preparation of an Environmental Assessment (EA); and preparation of an Environmental Impact Statement (EIS).

At the first level, an action may be categorically excluded from a detailed environmental analysis if it meets certain established criteria determining that there is no significant environmental impact. At the second level, an environmental assessment is prepared to help determine whether or not the proposed action will significantly affect the environment. If the answer is no, then the agency issues a Finding of No Significant Impact (FONSI). The FONSI may also address mitigation measures taken to reduce potentially significant impacts. At the third level, an EIS is prepared if the Federal agency determines that the proposed action may significantly affect the environment, or if the proposal is controversial from an environmental perspective.

The issuance of an Incidental Take Permit under Section 10(a)(1)(B) or a limit from take prohibitions under Section 4(d) of the ESA is a Federal action subject to NEPA. In the case of a complex conservation plan like the FPHCP, an EIS is the appropriate NEPA document. An EIS analyzes the proposed action for its impact on the environment and all reasonable alternatives to the proposed action.

2-3.2 National Historic Preservation Act

The National Historic Preservation Act (NHPA) became law in 1966 and provides for the preservation of significant historical features (buildings, objects and sites) through a grant-in-aid program to the states. The states—through State Historic Preservation Officers appointed by the governor of each state—provide matching funds, a designated state office, and a statewide preservation program tailored to state and local needs and designed to support and promote state and local historic preservation interests and priorities. The NHPA established the National Register of Historic Places (National Register) and the Advisory Council on Historic Preservation (ACHP). Federal agencies are directed to take into account the effects of their actions on items or sites listed or eligible for listing in the National Register (Digest of Federal Resource Laws of Interest to the U.S. Fish and Wildlife Service n.d.).

Section 106 of the NHPA requires Federal agencies to consider the effects of their actions on historic properties and to consult with any tribe that attaches religious and cultural significance to historic properties that may be affected by an action. It applies to historic properties that are listed in or eligible for listing in the National Register. Issuance of Incidental Take Permits, as a Federal action, requires compliance with Section 106 of the NHPA (Advisory Council on Historic Preservation n.d).

2-3.3 Columbia River Gorge National Scenic Area Act

The states of Oregon and Washington entered into a compact preauthorized by Congress to implement the Columbia River Gorge National Scenic Area (CRGNSA) Act (16 U.S.C. §§ 544, et seq. chapter 43.97 RCW, 16 U.S.C. § 544c). The CRGNSA Act established a national scenic area in 1986 to protect and enhance the scenic, cultural, recreational and natural resources of the Columbia River Gorge; to support the economy of the area by encouraging growth to occur in urban areas; and to allow economic development consistent with resource protection. The CRGNSA Act encompasses 300,000 acres of scenic vistas; habitat for rare, threatened and endangered plants, animals and anadramous fish; ancient Indian rock art and other cultural sites; and privately owned timber, farmland and orchards (USDA Forest Service n.d.).

A bi-state agency, the Columbia River Gorge Commission, was authorized by the CRGNSA Act to develop and adopt land use and resource protection policy. The Columbia River Gorge Commission works closely with state and Federal agencies and tribal and community partners to accomplish its goals (USDA Forest Service n.d.).

The CRGNSA Act special management area guidelines were established and apply to all forest practices within the CRGNSA Act special management area, along with the forest practices rules. DNR consults with the USDA Forest Service and the Columbia River Gorge Commission when reviewing forest practices applications or notifications within the CRGNSA Act special management area, and prior to making any determination.

2-3.4 State Environmental Policy Act

The State Environmental Policy Act (43.21C RCW) was enacted in 1971 and is modeled after NEPA. It requires that decisions made by government agencies be subject to an environmental review process. SEPA provides a regulatory framework for government agencies to follow when submitting proposals for actions, requiring them to identify and, if needed, mitigate for potential environmental impacts (WAC 197-11-055(2)(c) and WAC 197-11-030(2)(b) and (g)). The SEPA process also requires government agencies to solicit involvement from the public and other agencies in the environmental review process (WAC 197-11-030(2)(f)).

Like NEPA, SEPA has different requirements depending on whether or not a proposed action could significantly affect the environment. An environmental checklist is required for all nonexempt actions. Based on the review of the environmental checklist and any additional documents, a threshold determination is made: a Determination of Non-Significance (DNS), a Mitigated or Modified Determination of Non-Significance (MDNS), or a Determination of Significance (DS). A DNS does not require any additional documentation, an MDNS requires an EA and information on the mitigation measures, and a DS—issued for actions determined to have potential for a substantial impact on the environment—requires the preparation of an EIS (Ecology 2002).

Prior to adopting new forest practices rules or making significant amendments to rules, the Board typically prepares an EIS according to SEPA requirements, including an extensive public review process. The EIS analyzes the environmental impacts of the proposed rules and reasonable alternatives to the rules, and serves to inform all reviewers (including the public), required agencies and the government agency making the decision.

Class I, II and III forest practices are exempt from SEPA. The majority of forest practices applications fall within these three categories. Class IV-Special forest practices have been determined by the Board to have potential for a substantial impact on the environment and require an environmental checklist in compliance with SEPA guidelines. Pursuant with SEPA and the forest practices rules, applicants for Class IV-Special forest practices must submit an environmental checklist with their forest practices application. Additional information or a detailed environmental statement may be required before forest practices may be conducted (WAC 222-16-050(1) and (2)). For more information, see FPHCP Section 4.1.3.1.1, Classes of Forest Practices.

2-3.5 Growth Management Act

The state Growth Management Act (GMA) was passed in 1990 out of concern that population growth and suburban sprawl were threatening Washington's ecosystems and quality of life (GMS 1999). The GMA requires most local governments to develop comprehensive growth management plans for their communities, including growth planning, the establishment of urban growth boundaries (or Urban Growth Areas), the designation of rural land uses, the designation and protection of critical areas (such as wetlands, unstable slopes, fish and wildlife habitat conservation areas and floodplains) and the classification and designation of resource lands (forest, agricultural and mineral lands) (GMS 1999). While the specific requirements under the GMA are different for cities and counties depending on their size and rate of growth, all local governments have some planning requirements and must develop their own regulations consistent with their GMA plans (GMS 1999). Some counties are not required to prepare comprehensive land use plans, but must abide by all other elements of the GMA—particularly the protection of critical areas.

Many of the forestlands covered under the FPHCP have been designated under the GMA as "resource lands." Cities and counties are required to develop special policies for the use and conservation of those lands (GMS 1999). Forest practices activities that occur in designated urban growth areas must comply with the local jurisdiction's critical areas ordinances, and these ordinances must be at least as protective as the state forest practices rules.

2-3.6 Clean Water Act and the Washington State Water Pollution Control Act

The Federal Clean Water Act (33 U.S.C. 1251), under the jurisdiction of the EPA, was enacted in 1972 and is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, manage polluted runoff and finance municipal wastewater treatment facilities and nonpoint source pollution control activities. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water" (EPA 2003).

The Washington State Water Pollution Control Act (chapter 90.48 RCW) designates Ecology as the agency responsible for carrying out provisions of the CWA, using its own independent regulatory authority. Ecology establishes Washington's water quality standards—pursuant to review and approval by EPA—and may directly enforce provisions of the CWA or use the state's water quality statutes and rules.

For many years, the CWA's focus was mainly on restoring and maintaining the chemical integrity of water bodies. During the last decade, however, more attention has been given to water's physical and biological integrity. Evolution of CWA programs has also included a shift from a program-by-program, source-by-source, pollutant-by-pollutant approach to more holistic watershed-based strategies in which equal emphasis is placed on protecting healthy waters and restoring impaired ones (EPA 2003).

CLEAN WATER ACT – SECTION 303(d)

The Clean Water Act established a process to identify and clean up polluted waters. Every two years, states are required to prepare a list of water bodies that do not meet CWA water quality standards. This list is the 303(d) list because it is described in Section 303(d) of the CWA. Before compiling the list, Ecology develops, through a public process, a listing policy that describes how it will determine which bodies of water are included on the 303(d) list.

To develop the list, Ecology compiles its own water quality data, invites other groups to submit water quality data they have collected, and reviews all data submitted to ensure that appropriate scientific methods were used. The list is then reviewed during a formal public comment period, modified as appropriate, and is then submitted to EPA, which has the authority to approve or disapprove it.

WATER CLEANUP PLAN – TOTAL MAXIMUM DAILY LOAD PROCESS

The CWA requires that a water cleanup plan, also known as a total maximum daily load, be developed for each of the water bodies on the 303(d) list. A TMDL is the maximum amount of pollution or "pollutant load" that a water body can assimilate without violating water quality standards. A water body stays on the 303(d) list until a TMDL has been developed for it, its pollution problem is addressed through some other pollution control process or it meets water quality standards. Ecology monitors the effectiveness of TMDLs and other pollution controls and, if the plan is ineffective, can re-list the water body and require more stringent pollution controls.

In response to litigation on TMDLs in 1992, EPA and Ecology developed a memorandum of agreement stipulating that TMDLs for all of the water bodies on the 1996 303(d) list would be completed by 2013.

Each TMDL has five major components:

1) An identification of the type, amount, and sources of water pollution in a particular water body or segment;

2) A determination of the capacity of the water to assimilate pollution and still remain healthy;

3) An allocation showing how much pollution each source will be allowed to discharge;

4) A strategy to attain the allocations; and

5) A monitoring plan to assess effectiveness as the TMDL is implemented.

For pollution coming from point sources, identifying sources and developing a TMDL implementation strategy is usually straightforward. Point sources are locations from which discharge occurs from a specific source(s), such as industrial plants or municipal wastewater treatment plants. Ecology permits regulate point sources, so the TMDL discharge limit is included in the permit.

For pollution coming from nonpoint sources, implementing a TMDL is more complicated. Nonpoint source pollution is generated by a wide variety of land uses, including forest practices. Loss of shade to a stream, sediment-laden runoff from a poorly maintained forest road, or pesticide overspray reaching surface water are all examples of nonpoint pollution that can result from forest practices. For nonpoint sources, a TMDL must evaluate potential methods to control the pollutants and suggest an array of methods that can be used. These methods are referred to as "Best Management Practices." Usually there are many best management practices that could be used to address a nonpoint source pollution problem. It is up to landowners to select and implement the array of practices that will address the pollution generated on a property.

CO-PROMULGATION OF FOREST PRACTICES RULES

The process outlined in the CWA of identifying polluted waters, developing and implementing TMDLs and monitoring 303(d) listed waters is not the only approach Ecology uses to maintain water quality in the state. Water quality is also protected through the implementation of the forest practices rules.

Ecology has a unique role in the adoption and implementation of the forest practices rules because the Washington State Forest Practices Act and rules were designed and adopted, in part, to meet the requirements of the CWA and the state water quality standards. The Forest Practices Board is the agency responsible for adopting the forest practices rules. However, for those sections of the rules pertaining to water quality protection, the Board must reach agreement with the director of Ecology, or the director's designee on the Board (RCW 76.09.040(1)(e)). DNR implements and enforces the rules. Ecology also has authority to independently enforce the "water quality" sections of the rules (76.09.100 RCW).

The forest practices rules, consistent with the Forests and Fish Report, contain an array of best management practices believed to be most effective in protecting and improving water quality and habitat for threatened and endangered species while maintaining a viable forest products industry. As such, they provide a pathway to achieve compliance with the state water quality standards and the CWA. Because the forest practices rules are so detailed and complete, they essentially accomplish "early implementation" of the same best management practices likely to be used if a TMDL had been produced.

OTHER ECOLOGY PLANS AND PROGRAMS

In addition to the commitments made in the Forests and Fish Report, Ecology also formally recognizes the forest practices rules in its other water quality plans and programs.

- Washington's Water Quality Management Plan to Control Nonpoint Source Pollution (the Nonpoint Plan), adopted in April 2000. The plan outlines the state's strategies to deal with nonpoint source pollution (Ecology 2000). A December 2005 update will describe compliance with the forest practices rules as the state's strategy for addressing nonpoint source pollution caused by forest practices.

- Annual report on accomplishments in implementing the Nonpoint Plan. The report is submitted to EPA each year, and describes the state's accomplishments in addressing nonpoint source pollution. The effectiveness of the forest practices rules and those rules assessed through the adaptive management process will be included in the report.

- TMDL Implementation – TMDLs for waters impaired by forest practices operations are deferred until 2009 to allow time for the implementation of FFR, including an assessment of the effectiveness of the adaptive management process. Until then, TMDL implementation in mixed-use watersheds will be implemented through compliance with the forest practices rules. The 2002 303(d) list recognizes this by listing those waters impaired by forest practices as a low priority for TMDL preparation.

- TMDL scoping process and effectiveness monitoring – Ecology has ongoing processes to schedule TMDL production and to assess the effectiveness of completed TMDLs. TMDL effectiveness monitoring information from mixed use watersheds will be used to supplement information obtained from the Forests and Fish Report adaptive management process to help determine the effectiveness of the forest practices rules. Both monitoring processes will be used in the TMDL scoping process to schedule TMDL production in 2009 and thereafter.

- Performance Partnership Agreement – Ecology will continue to use the funds from the Performance Partnership Grant it receives from EPA to support its implementation of the forest practices rules.

2-3.7 State Listing of Endangered, Threatened and Sensitive Wildlife Species

WDFW maintains a list of state endangered, threatened and sensitive wildlife species (WAC 232-12-014 and 232-12-011). In 1990, the Washington Fish and Wildlife Commission adopted procedures that identify how species are listed, criteria for listing and de-listing, and requirements for recovery and management plans (WAC 232-12-297). These lists are separate from the Federal ESA lists because they focus on a species' status exclusive to Washington State. Critical wildlife habitats associated with state or federally listed species are identified in WAC 222-16-080.

Specific forest practices that are conducted within critical wildlife habitats associated with state-listed species are a Class IV-Special. Compliance with SEPA guidelines and policies is required. See FPHCP Sections 2.3.4, State Environmental Policy Act, and 4.1.3.1.1, Classes of Forest Practices, for more information.

2-3.8 Shoreline Management Act

The state Shoreline Management Act (SMA) was passed by Washington's legislature in 1971 and is intended "to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner, which, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public

health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto" (RCW 90.58.020).

The SMA applies to more than 2,300 miles of lakeshores, 16,000 miles of streams and 2,400 miles of marine shoreline all designated as "shorelines of the state" (Ecology 1999). The SMA establishes a balance of authority between local and state government and is implemented by Ecology and the relevant local governmental entities. Cities and counties are the primary regulators, but Ecology retains the authority to review local programs and permit decisions (Ecology 1999). Shorelines of the state that are regulated by the SMA include (Ecology 1999; RCW 90.58.030(20)):

- All marine waters.
- Streams with greater than 20 cubic feet per second mean annual flow.
- Lakes 20 acres or larger.
- Upland areas called shorelands that extend a minimum of 200 feet landward from the edge of these waters (ordinary high water mark) and may include up to the entire 100-year flood plain.
- Wetlands and river deltas when they are associated with one of the above.

Cities and counties with waters that meet the definition under "shorelines of the state" are required to develop a Shoreline Master Program that regulates uses of the shorelines and is consistent with the SMA (RCW 90.58.070 and RCW 90.58.080).

Forest practices rules define Type 1 waters as shorelines of the state and are regulated under the SMA (WAC 222-16-030(1)). Type 1 waters generally include larger lakes and rivers as well as tidally influenced areas along Washington's western coast and within the Strait of Juan de Fuca and Puget Sound. See FPHCP Section 4b-1.1, Interim Water Typing System, for more information. Forest practices operations must comply with both the city or county's Shoreline Master Program and the forest practices rules. Substantial developments along these shorelines require a special permit from the local city or county responsible for administering the SMA (RCW 90.58.140(2)).

The SMA also designates certain waters as "shorelines of statewide significance" where, in their management, "the interests of all the people shall be paramount" (RCW 90.58.020). These waters are defined in the SMA as (Ecology 1999):

- Pacific Coast, Hood Canal and certain Puget Sound shorelines;
- Lakes or reservoirs with more than 1,000 surface acres;
- Larger rivers (1,000 cubic ft/sec or greater for rivers in western Washington, 200 cubic ft/s and greater east of the Cascade crest);
- Shorelands and wetlands associated with all of the above; and
- All other areas of the Puget Sound and the Strait of Juan de Fuca below extreme low water.

Landowners wishing to harvest timber within 200 feet shoreward from the ordinary high water mark of "shorelines of statewide significance" are permitted only selective commercial timber cutting, and may harvest no more than 30 percent of the merchantable trees within a 10-year time frame (RCW 90.58.150). Exceptions are provided only in limited cases where topography, soil conditions or silvicultural practices necessary for regeneration render selective logging ecologically detrimental; or clearcutting may be permitted if it is solely incidental to the preparation of land for other uses authorized by the SMA (RCW 90.58.150).

2-3.9 Washington Pesticide Laws and Regulations (Washington Department of Agriculture)

The Washington State Department of Agriculture (WSDA) regulates the distribution, use and disposal of pesticides and fertilizers in Washington State (RCW 15.58). Landowners who apply pesticides for forest management are required to keep records of their applications pursuant to the applicator requirements of the General Pesticide Rules (WAC 16-228-1320). The WSDA may also require landowners to obtain a pesticide license to apply certain "restricted use" pesticides that pose a potential threat to humans or the environment (WSDA 2002; RCW 15.58.160(2)(a) and RCW 17.21). Both DNR and Ecology enforce regulations regarding the handling, storage and application of pesticides, fertilizers and other forest chemicals to ensure compliance with all forest practices rules relating to forest chemicals (WAC 222-38).

Forest practices applications or notifications are not required for forest practices that are conducted to control exotic forest insect or disease outbreaks, when they are conducted by or under the direction of the Department of Agriculture, or when ordered by the governor or the director of the Department of Agriculture. Forest practices applications or notifications are also not required when emergency pest control measures are conducted by DNR under a forest health emergency declaration by the Commissioner of Public Lands (RCW 76.09.060 (8)).